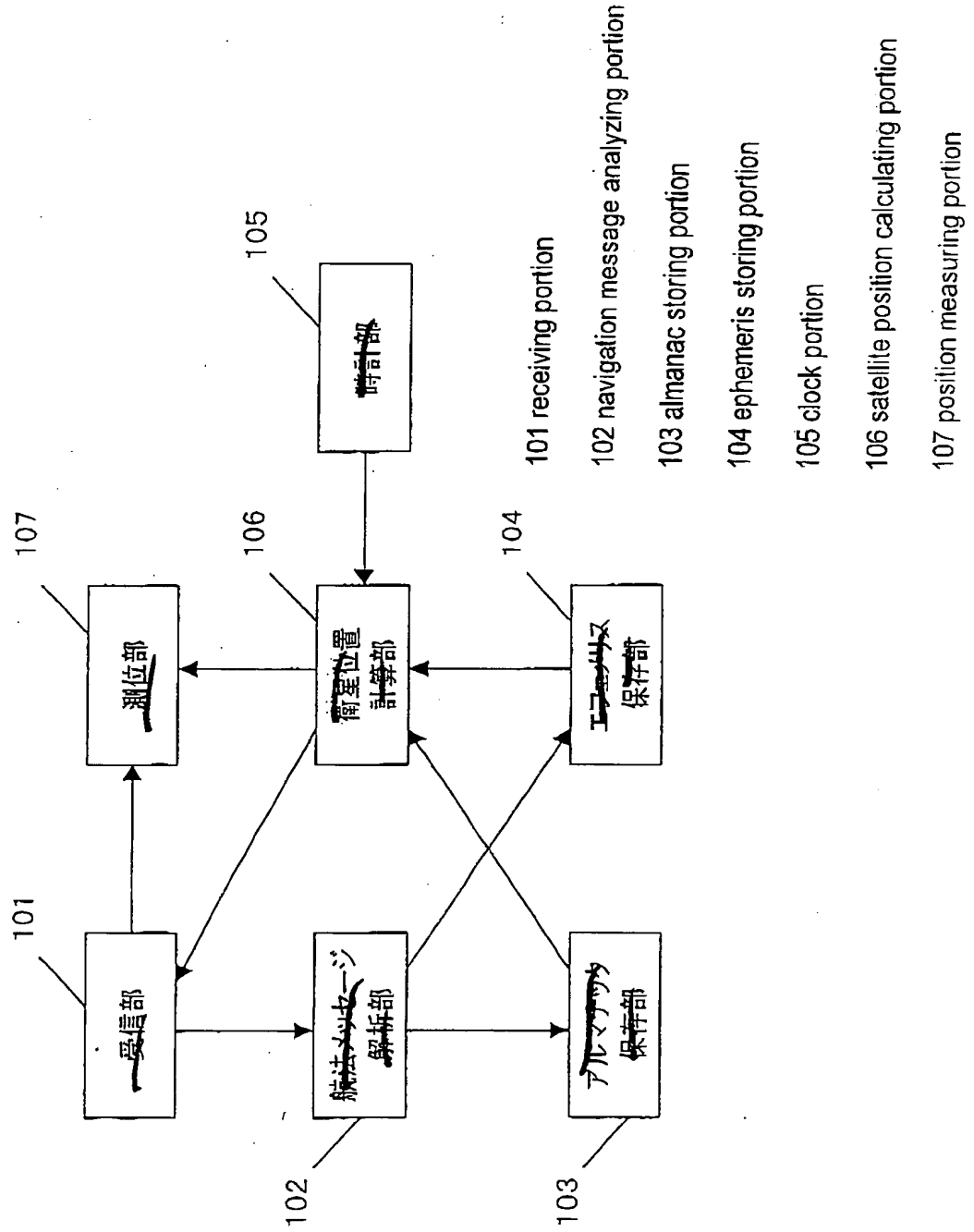
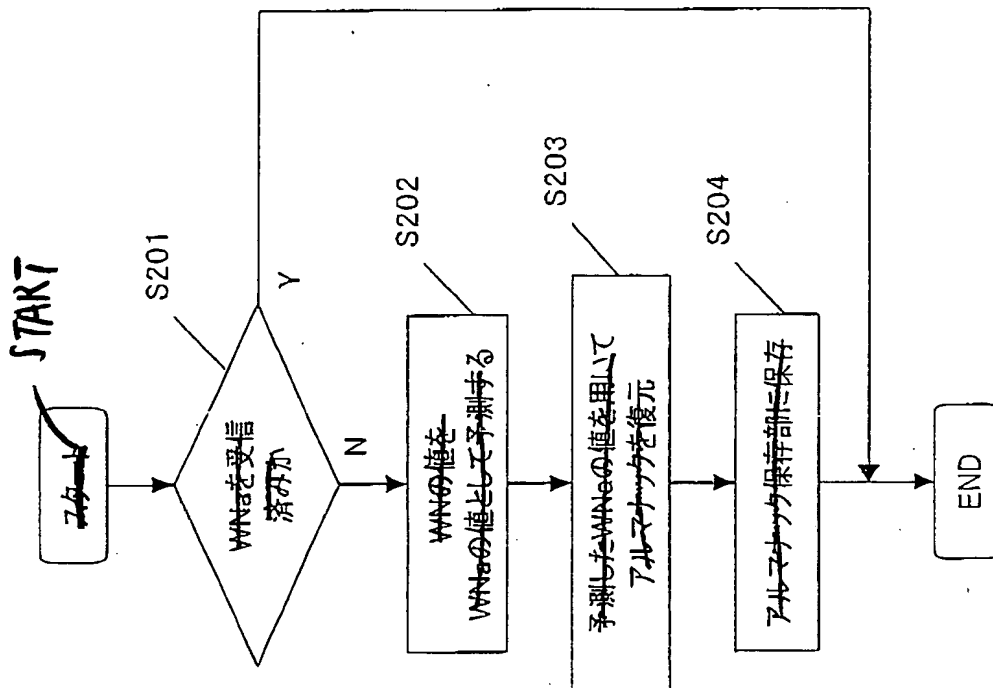


Fig. 1



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Fig. 2



S201 WNa has been already received ?

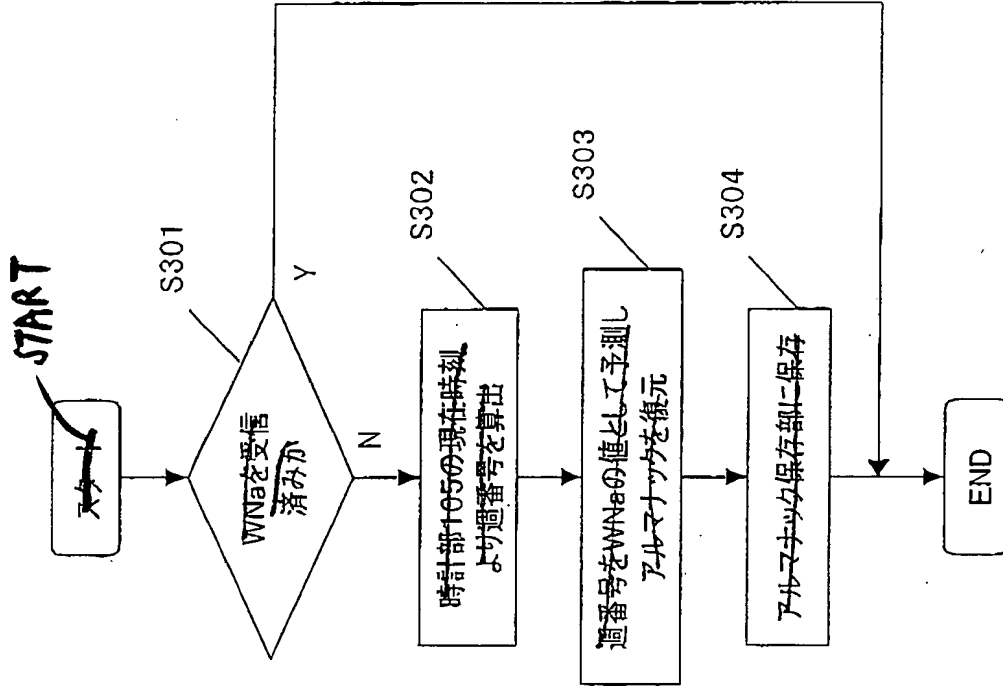
S202 predict a WN value as a WNa value

S203 restore an almanac by using the predicted WNa value

S204 store in an almanac storing portion

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図3
Fig 3



S301 WNA has already been received ?

S302 calculate a week number based on a current time of a clock portion 105

S303 predict the week number as a WNA value and restore an almanac

S304 store in an almanac storing portion

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S401 calculate a week number and a time lapsed from a head of the week based on a current time of a clock portion 105

S402 a difference between the received Z count and the calculated time lapsed from a head of the week exceeds a threshold value ?

S403 decide that an almanac which is restored based on the predicted WNa is abnormal

S404 abandon

S405 decide that an almanac which is restored based on the predicted WNa is valid

S406 store in an almanac storing portion

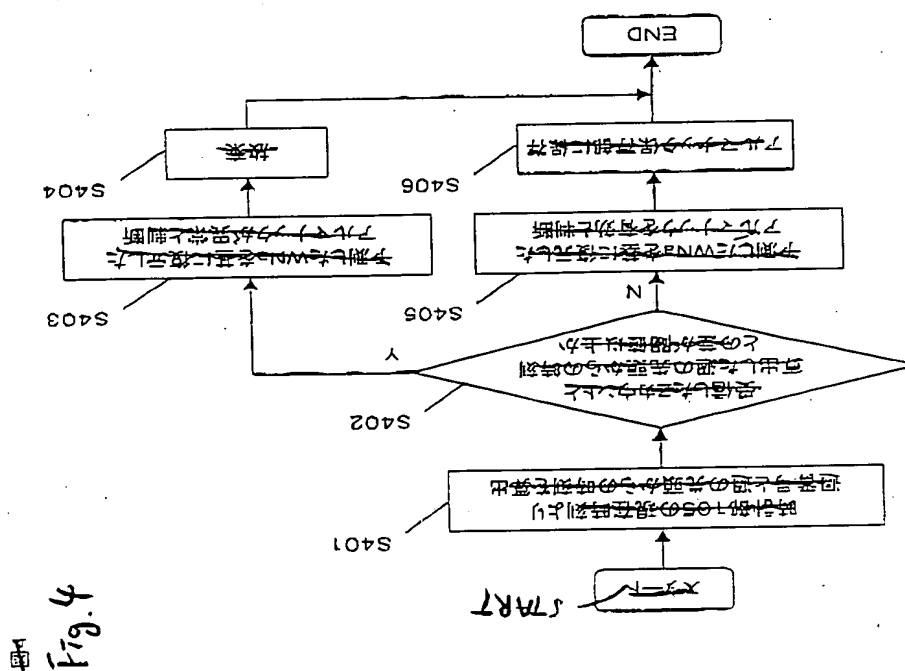


Fig. 4

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A501 The almanac is stored ?
 S502 calculate a satellite position by using the almanac which is stored
 S503 calculate a satellite position by using the almanac which is restored based on the predicted WNA
 A504 a positional difference between them exceeds a threshold value ?
 A505 decide that an almanac which is restored based on the predicted WNA is abnormal
 S506 abandon
 S507 decide that an almanac which is restored based on the predicted WNA is valid
 S508 store in an almanac storing portion

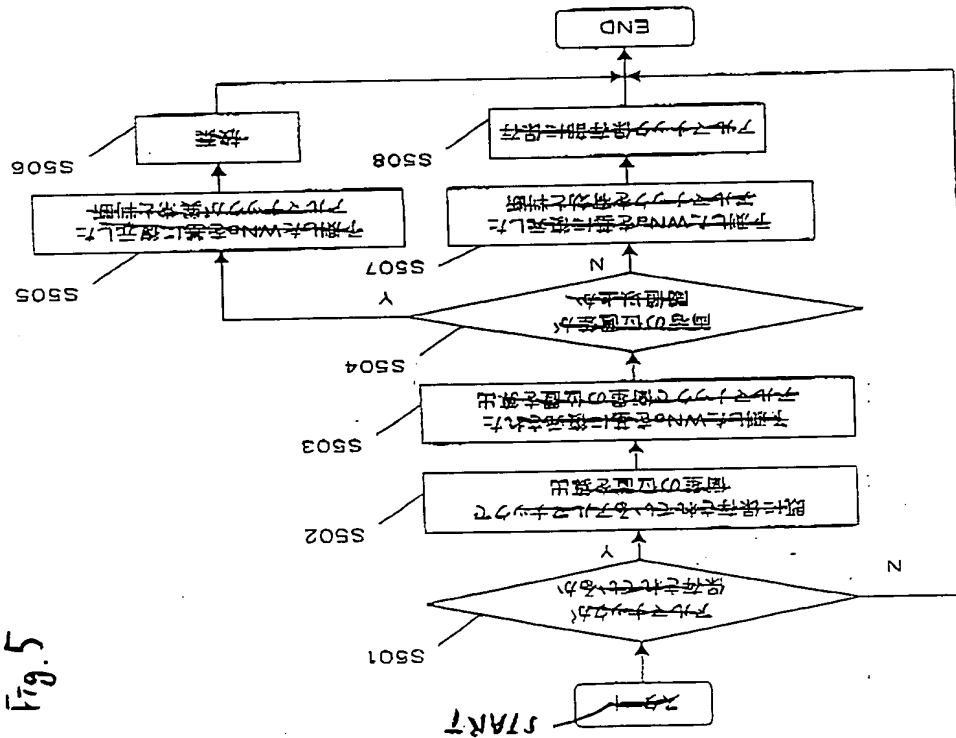
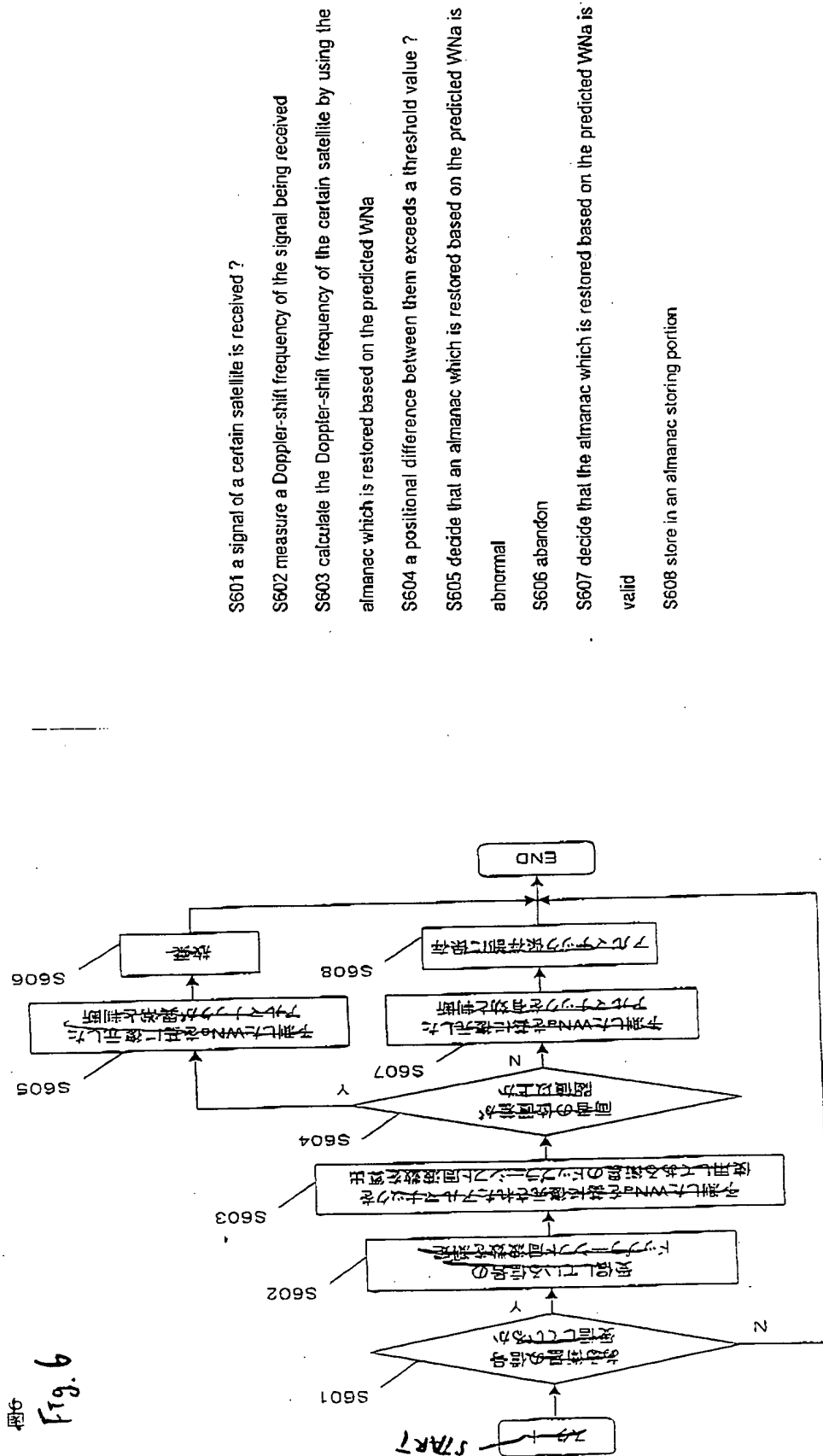


図5
Fig. 5

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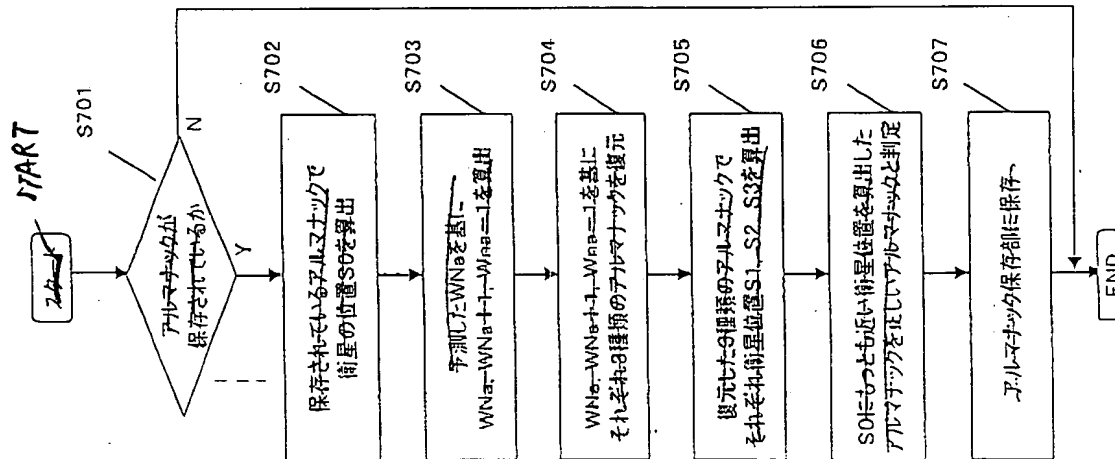
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図7

Fig. 7



S701 The almanac is stored ?

S702 calculate a satellite position S0 by using the almanac which is stored

S703 calculate WNa, WNa+1, WNa-1 based on the predicted WNa

S704 restore three almanacs based on WNa, WNa+1, WNa-1 respectively

S705 calculate satellite positions S1, S2, S3 by using three restored almanacs respectively

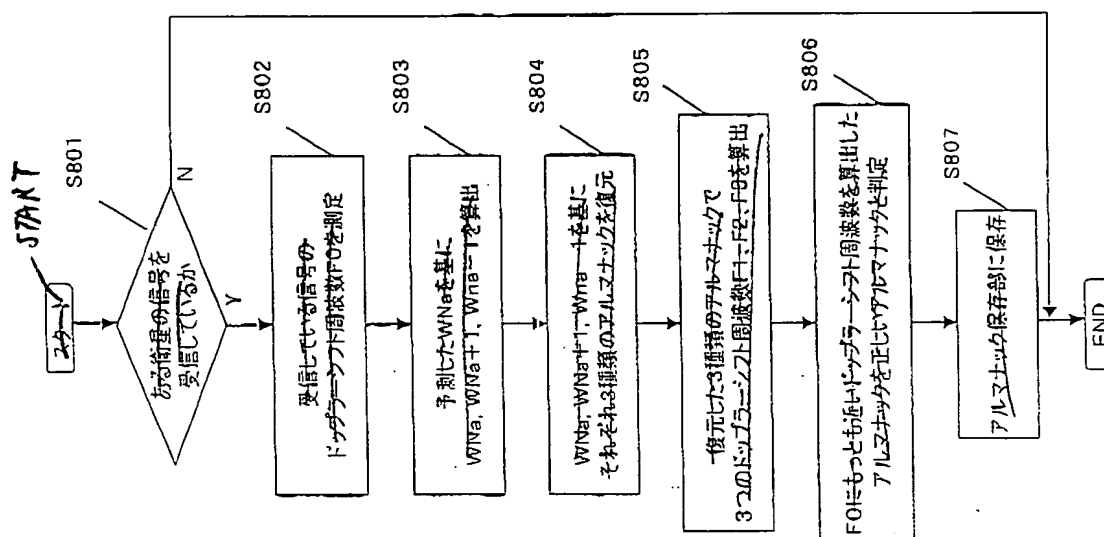
S706 decide the almanac which calculates the satellite position closest to S1 as a valid almanac

S707 store in an almanac storing portion

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図8

Fig. 8



S801 a signal of a certain satellite is received ?

S802 measure a Doppler-shift frequency F0 of the signal being received

S803 calculate WNa, WNa+1, WNa-1 based on the predicted WNa

S804 restore three almanacs based on WNa, WNa+1, WNa-1 respectively

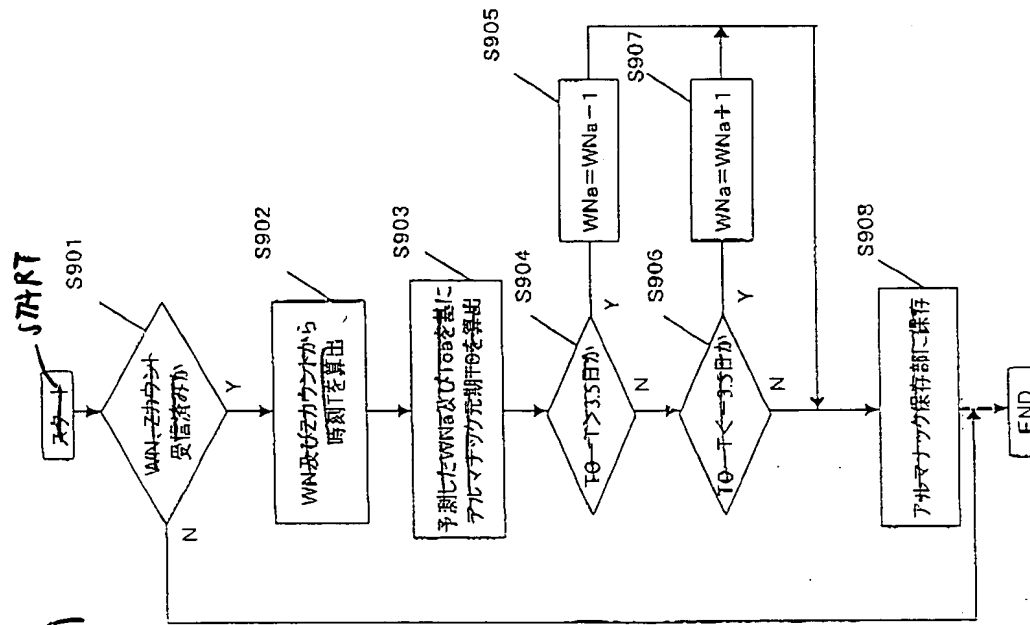
S805 calculate three Doppler-shift frequencies F1, F2, F3 by using three restored almanacs

S806 decide the almanac that calculates the Doppler-shift frequency closest to F0 as a valid almanac

S807 store in an almanac storing portion

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Fig. 9



S901 WNa, Z count already is received ?

S902 calculate a time T based on WNa and Z count

S903 calculate an epoch of the almanac based on predicted WNa and Toa

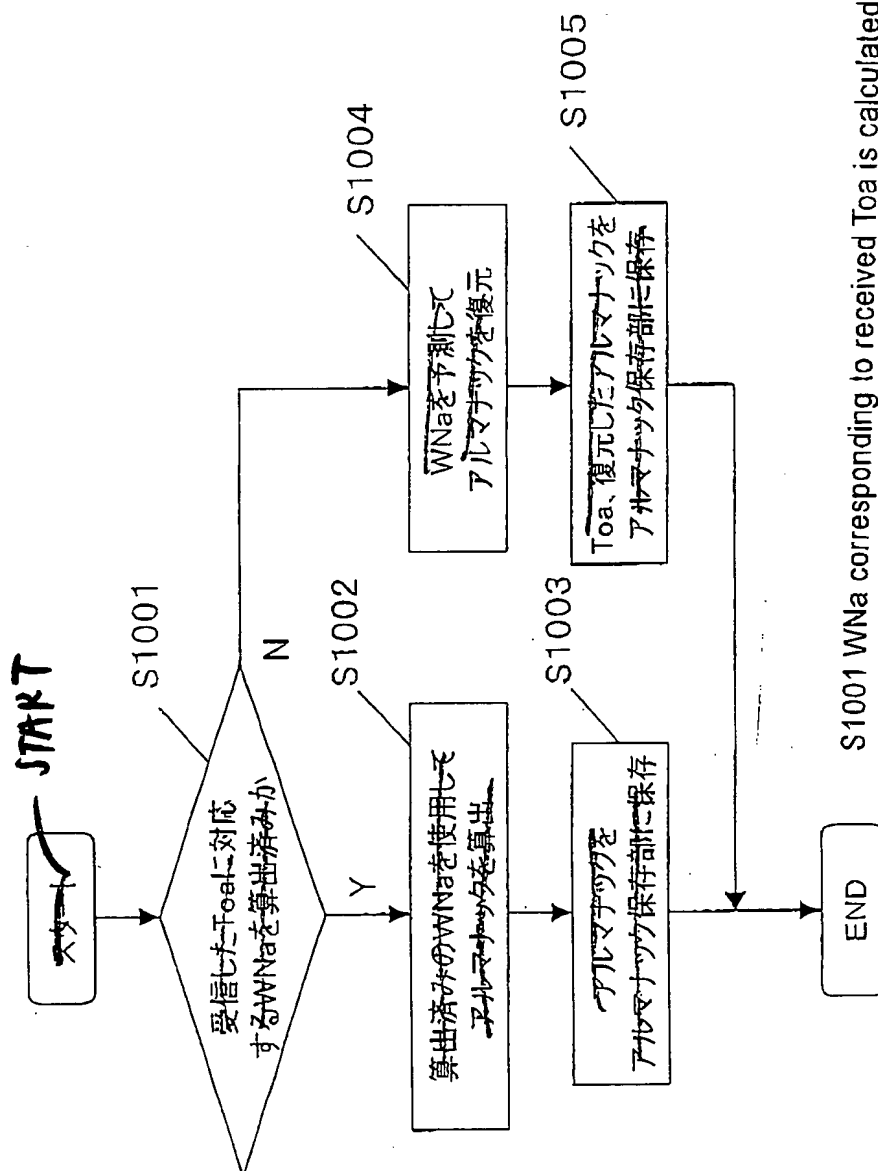
S904 To-T > 3.5 days ?

S906 To-T < 3.5 days ?

S908 store in an almanac storing portion

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Fig. 10



S1001 WNa corresponding to received Toa is calculated ?

S1002 calculate an almanac by using the calculated WNa

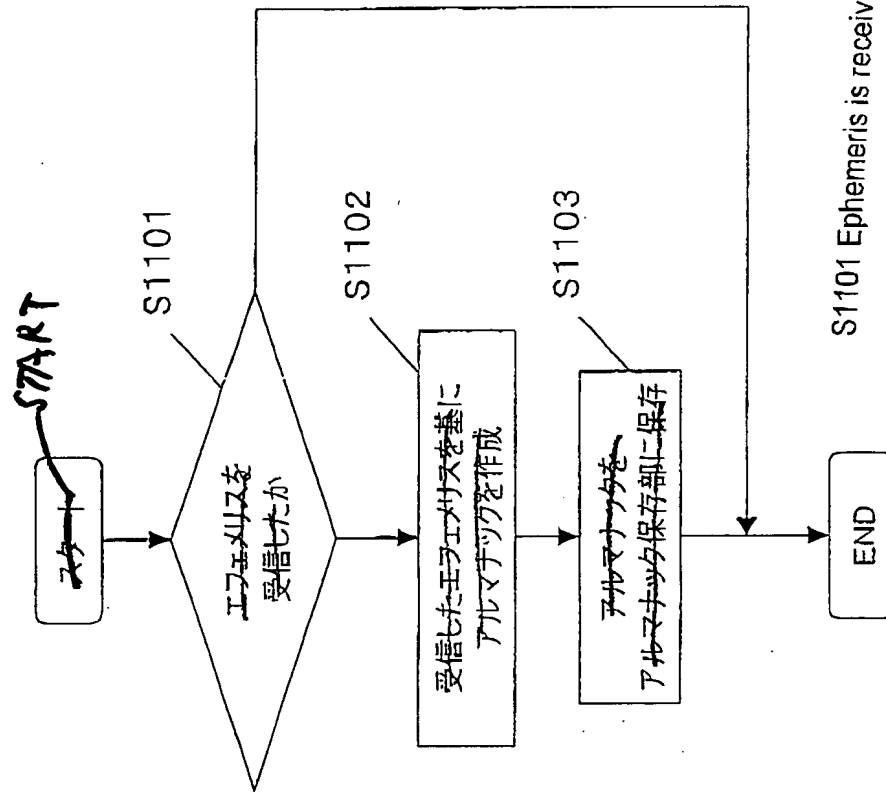
S1003 store the almanac in an almanac storing portion

S1004 restore the almanac by predicting WNa

S1005 store Toa and the restored almanac in an almanac storing portion

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Fig. 11

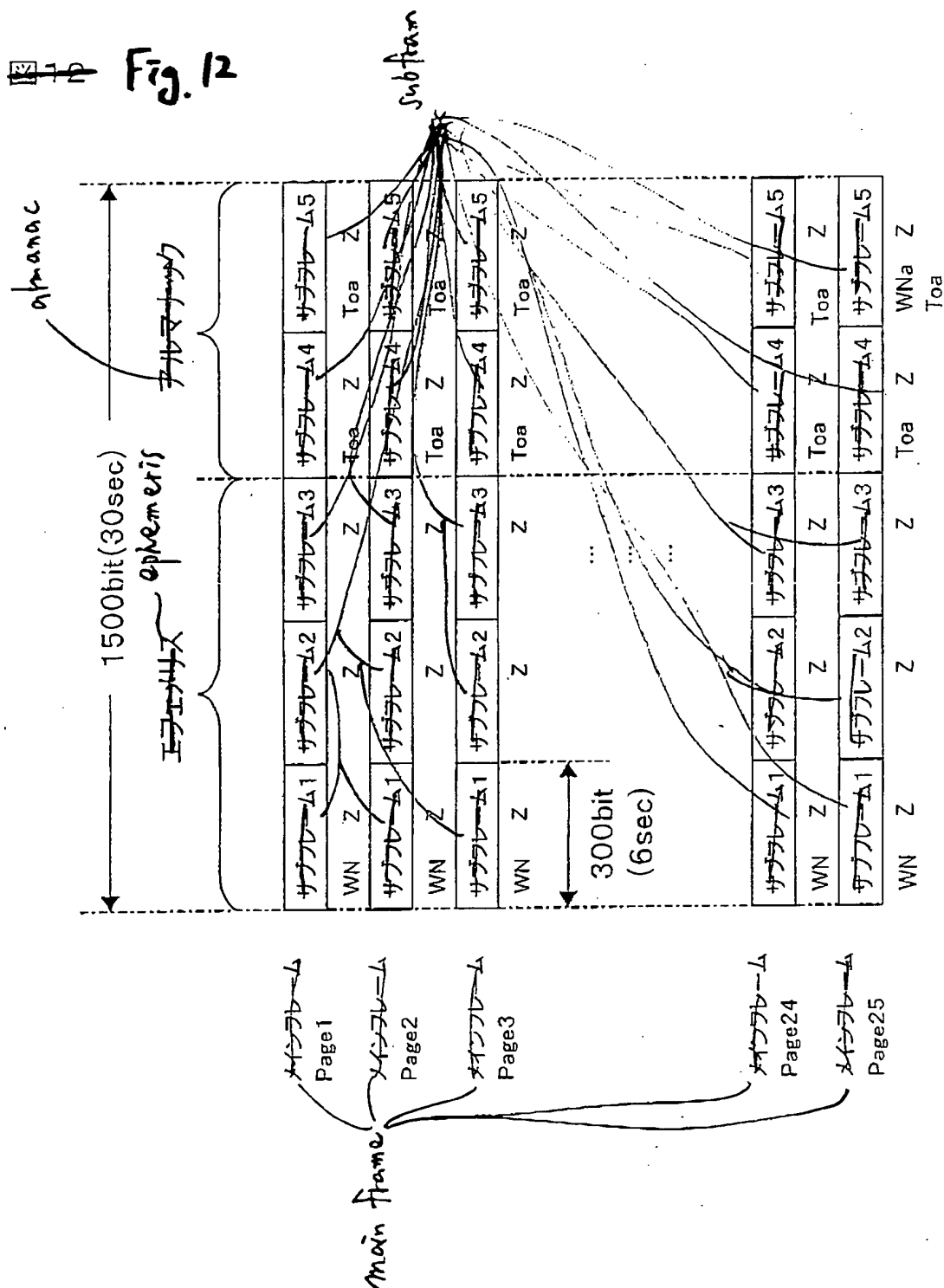


S1101 Ephemeris is received ?

S1102 form an almanac based on received ephemeris

S1103 store the almanac in an almanac storing portion

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図 13

Fig. 13

